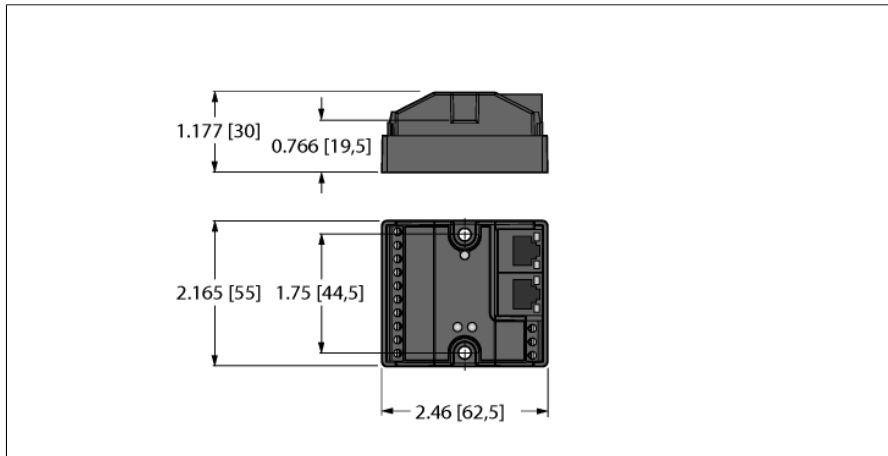


Compact IP20 Multiprotocol Ethernet I/O Station

4 Digital NPN Inputs and 4 Configurable Digital NPN Channels

FEN20-4DIN-4DXN



- EtherNet/IP™ Slave
- Modbus TCP Slave
- PROFINET Slave
- Integrated Ethernet Switch
- 10 Mbps / 100 Mbps supported
- 2 x RJ45 Sockets for Fieldbus Connection
- 4 digital NPN inputs
- 4 configurable NPN channels, DI or DO
- 24 VDC
- 1 A outputs
- Protection class IP20

Type	FEN20-4DIN-4DXN
ID	6814129
<hr/>	
Number of channels	8
Operating / load voltage	12...30 VDC
Operating current	100 mA
Electrical isolation	500V Galvanic Zone-Zone and Zone-Ethernet
Supply voltage	24 VDC
Power dissipation, typical	≤ 2.4 W
Voltage supply connection	Screw terminals
<hr/>	
Inputs	
Number of channels	8
Input voltage	24 VDC
Supply current	700 mA
Switching threshold	No specification for NPN devices
Low level signal voltage	> (Vsupply - 5V)
High level signal voltage	< (Vsupply - 11V)
Low level signal current	< 1.5 mA
High level signal current	> 2 mA
Input delay	2.5 ms
Max. input current	6 mA
<hr/>	
Outputs	
Number of channels	4
Output voltage	12...30 VDC
Output current per channel	1 A
Output total current	4 A
Load type	Resistive, Inductive, Lamp Load
Short-circuit protection	yes
<hr/>	
System data	
Transmission rate	10/100 Mbps; Full/Half Duplex; Auto Negotiation; Auto Crossing
Addressing modes Ethernet:	via Software
Connection technology Ethernet	2 x RJ45 female connector
Protocol detection	automatic
Web server	192.168.1.254 (Default)
Service interface	Ethernet
Device Reset	via Push-button
<hr/>	
Modbus TCP	
Addressing	Static IP, BOOTP, DHCP
Supported function codes	FC1, FC2, FC3, FC4, FC5, FC6, FC15, FC16, FC23
Number of TCP connections	6
Input Data Size	max. 1 register
Input register start address	0 (0x0000 hex)
Output Data Size	max. 1 register
Output register start address	2048 (0x0800 hex)

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Ethernet/IP

Addressing	acc. to EtherNet/IP specification
Quick Connect (QC)	< 150 ms
Device Level Ring (DLR)	supported
Class 1 connections (CIP)	6

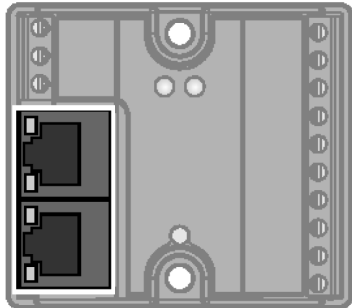
PROFINET

Addressing	DCP
Conformance class	B (RT)
MinCycleTime	1 ms
Fast Start-Up (FSU)	< 150 ms
Diagnostics	acc. to PROFINET alarm handling
Topology detection	supported
Automatic addressing	supported
Media Redundancy Protocol (MRP)	supported

Dimensions (W x L x H)

Housing material	55 x 62.5 x 30 mm
Ambient temperature	Fiber-glass reinforced Polyamide (PA6-GF30)
Storage temperature	-40...+70 °C
Vibration test	-40...+85 °C
Shock test	Acc. to IEC 60068-2-6
Protection class	Acc. to IEC 60068-2-27
MTTF	IP20
Approvals	456 years acc. to SN 29500 (Ed. 99) 20 °C
	CE, cULus

Compact IP20 Multiprotocol Ethernet I/O Station
4 Digital NPN Inputs and 4 Configurable Digital NPN Channels
FEN20-4DIN-4DXN



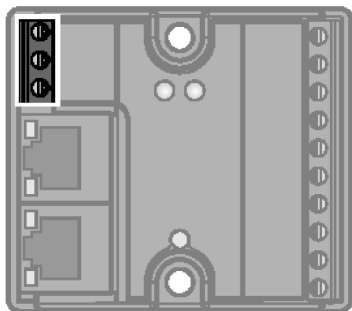
Ethernet Ports

Fieldbus cable (example): RJ45S RJ45S 441-2M (Ident no. U-06842)

RJ45 Ethernet



- 1 = TX +
- 2 = TX -
- 3 = RX +
- 4 = n.c.
- 5 = n.c.
- 6 = RX -
- 7 = n.c.
- 8 = n.c.



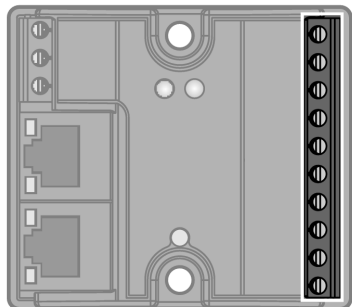
Power Supply

Recommended torque for screw terminals: 0.5 Nm (4.43 lb.in)

Power Supply



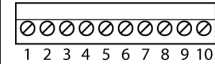
- 1 = ⊕
- 2 = V1 -
- 3 = V1 +



I/O Channels

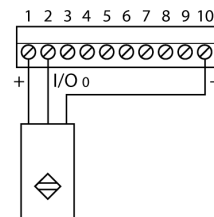
Recommended torque for screw terminals: 0.5 Nm (4.43 lb.in)

Terminal Connection

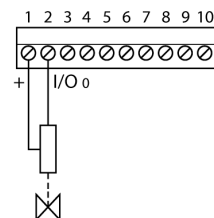


- 1 = V1 +
- 2 = I/O 0
- 3 = I/O 1
- 4 = I/O 2
- 5 = I/O 3
- 6 = I4
- 7 = I5
- 8 = I6
- 9 = I7
- 10 = Vout1 -

3-Wire



2-wire



Compact IP20 Multiprotocol Ethernet I/O Station

4 Digital NPN Inputs and 4 Configurable Digital NPN Channels

FEN20-4DIN-4DXN

Module LED Status

LED	Color	Status	Description
ETH1 / ETH2	Green	ON	Ethernet Link (100 Mbps)
		Flashing	Ethernet communication (100 Mbps)
	yellow	ON	Ethernet Link (10 Mbps)
		Flashing	Ethernet communication (10 Mbps)
		OFF	No Ethernet link
BUS	Green	ON	Active connection to a master
		flashing	operational
		flashing 3 × (1Hz)	ARGEE program running
	Red	ON	IP address conflict or status word active
		Flashing	Blink/Wink command active
		OFF	No power supply
Red/Green	Flashing (1Hz)	Assign IP address	
ERR	Green	ON	Diagnostics disabled
	Red	ON	Short-circuit

Compact IP20 Multiprotocol Ethernet I/O Station

4 Digital NPN Inputs and 4 Configurable Digital NPN Channels

FEN20-4DIN-4DXN

Process Data Mapping

Modbus TCP Register Mapping

	Reg	Bit 15	Bit 14	Bit 13	Bit 12	Bit 11	Bit 10	Bit 9	Bit 8	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Inputs (RO)	0x0000	-	-	-	-	-	-	-	-	DI7	DI6	DI5	DI4	DI3	DI2	DI1	DI0
Status (RO)	0x0001	-	FCE	-	-	CFG	COM	V1 low	-	-	-	-	-	-	-	-	Diag Warn
Diag (RO)	0x0002	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	I/O Diag
Outputs (RW)	0x0800	-	-	-	-	-	-	-	-	-	-	-	-	DO3	DO2	DO1	DO0
I/O Diag (RO)	0xA000	-	-	-	-	SCO3	SCO2	SCO1	SCO0	-	-	-	-	-	-	-	IGS

EtherNet/IP™ Data Mapping

INPUT	Word	Bit 15	Bit 14	Bit 13	Bit 12	Bit 11	Bit 10	Bit 9	Bit 8	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
	0	-	FCE	-	-	CFG	COM	V1 low	-	-	-	-	-	-	-	-	Diag Warn
	1	-	-	-	-	-	-	-	-	DI7	DI6	DI5	DI4	DI3	DI2	DI1	DI0
	2	-	-	Sched Diag	-	-	-	-	-	-	-	-	-	-	-	-	I/O Diag
	3	-	-	-	-	SCO3	SCO2	SCO1	SCO0	-	-	-	-	-	-	-	IGS
OUTPUT	Word	Bit 15	Bit 14	Bit 13	Bit 12	Bit 11	Bit 10	Bit 9	Bit 8	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1	-	-	-	-	-	-	-	-	-	-	-	-	DO3	DO2	DO1	DO0

PROFINET Process Data

	Byte	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Inputs	0	DI7	DI6	DI5	DI4	DI3	DI2	DI1	DI0
	1	-	-	-	-	-	-	-	-
Outputs	0	-	-	-	-	DO3	DO2	DO1	DO0
	1	-	-	-	-	-	-	-	-

Key:

DIx	Digital input x	COM	Communication error on internal module bus
DOx	Digital output x	CFG	I/O configuration error
IGS	Input group short-circuit	FCE	I/O-ASSISTANT Force Mode active
SCOx	Short-circuit output x	I/O Diag	I/O diagnostic detected
Diag Warn	Diagnostic at least on 1 channel	Sched Diag	Manufacturer-specific diagnostics configured and active
V1 low	Undervoltage V1	-	-

Compact IP20 Multiprotocol Ethernet I/O Station
4 Digital NPN Inputs and 4 Configurable Digital NPN Channels
FEN20-4DIN-4DXN

Accessories

Type code	Ident-No.		Dimension drawing
FDN20-BKT-DIN	Z0076	Mounting adapter for mounting of 8-channel Fx20 modules on DIN rail (TS 35)	